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PLAN OF WORK

CHOWAN- PASQUOTANK RIVER BASINS

NORTH CAROLINA
AND
VIRGINIA

FOR
WATER
AND RELATED
LAND RESOURCES
STUDY

March 1977

U.S. Department of Agriculture
Economic Research Service
Forest Service
Soil Conservation Service
and Other Cooperating Agencies

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PLAN OF WORK
FOR
WATER AND RELATED LAND RESOURCES STUDY
CHOWAN-PASQUOTANK RIVER BASINS
NORTH CAROLINA AND VIRGINIA

March 1977

UNITED STATES DEPARTMENT OF AGRICULTURE
Economic Research Service
Forest Service
Soil Conservation Service

In cooperation with

North Carolina Department of Natural and Economic Resources
U. S. Army Corps of Engineers, Norfolk and Wilmington Districts
Virginia State Water Control Board, Bureau of Water Control Management
North Carolina Soil and Water Conservation Commission
Virginia Soil and Water Conservation Commission
North Carolina-Virginia Water Resources Management Committee

Cover Photo: Pasquotank River at
Elizabeth City, North Carolina

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PLAN OF WORK
FOR
WATER AND RELATED LAND RESOURCES STUDY
CHOWAN-PASQUOTANK RIVER BASINS

Introduction

How and Why Study was Requested

In a letter dated October 6, 1970, the U. S. Army Corps of Engineers, Norfolk District, requested the U. S. Department of Agriculture (USDA) to make a study of the Chowan River Basin under authority of Section 204, Flood Control Act of June 30, 1948. The USDA was requested to provide an appraisal of the agricultural, rural and upstream watershed needs of the basin and to participate in the formulation of a framework plan for development of the basin's water resources. Potential problems and needs associated with the water and related land resources were to be estimated for an approximated 50-year period. Detailed studies were to be made to determine the structural, nonstructural, and associated land treatment measures which would be needed within the next 10 to 15 years.

A letter dated September 7, 1972, from the Administrator, USDA, Soil Conservation Service (SCS) directed the Virginia SCS State Conservationist to proceed with studies and to advise the appropriate state and local agencies that the USDA was prepared to cooperate in these studies and investigations. The Administrator appointed the SCS State Conservationist in Virginia as Chairman of the USDA Field Advisory Committee (FAC). The Economic Research Service (ERS) designated its Northeastern Resource Planning Group Leader of Broomall, Pennsylvania, to serve on the FAC. The Forest Service (FS) designated its Doraville, Georgia, Field Representative to serve on the FAC. The Administrator also directed the State Conservationist as Chairman of the FAC to prepare a plan of work mutually satisfactory to the USDA agencies and to the states involved.

Meetings were held with representatives of the Virginia State Water Control Board, Bureau of Water Control Management (SWCB) and the North Carolina Department of Natural and Economic Resource (DNER) to explain the Department of Agriculture's river basins technical assistance program. These meetings prompted requests late in 1975 or early 1976 to the USDA to proceed with studies on the Chowan and to add the Pasquotank River Basins and the Dismal Swamp to the study area.

The soil and water conservation commission from each state provided letters of endorsement. The North Carolina-Virginia Water Resources Management Committee took action on July 28, 1976, to write a letter to the USDA to endorse study efforts. In support of each state's efforts to develop a state water management plan, the USDA has been requested to provide all available data, to make additional studies related to identified study concerns and to identify alternative solutions.

Authority for the Study

The Agricultural Appropriation Act for fiscal year 1973 provided funds for the USDA to begin cooperating with the States of North Carolina and Virginia in studies and investigations of the Chowan River Basin under the provisions of Section 6, Public Law 83-566.

Expected Results

The USDA will prepare a report of its findings for agency use at the end of Phase 2 of the study. 1/ The report will consist primarily of data collected during Phase 2 for immediate use. Various working documents analyzing specific aspects of the study will be provided study participants. Meetings will be held with sponsors at the conclusion of Phase 2 to determine the need and/or set the stage for continuing into Phases 3 and 4. Data collected in Phase 2 will be used in developing Phases 3 and 4. Items which need further study and alternative solution preferences will be identified through the public involvement program and sponsors. A final report will be issued to include this additional work.

How Results Will Be Used

Basic data and results of studies will be used by the DNER and the SWCB in developing their respective state water management plans. Results of this study will be used in the ongoing nonpoint source pollution study, Section 208 of Public Law 92-500. The data will also contribute to the Southeast Basins Inter-Agency Committee's (SEBIAC) proposed Level "B" study for the same area. Decision makers at all levels of government in the study area should find the report useful as a source of raw data and problem identification.

Description of the Study Area

The study area includes all the area draining into Albermarle, Croatan and Roanoke Sounds, excluding the drainage of the Roanoke River. See Figure 1.

The Chowan-Pasquotank Basins are located in the extreme southeastern portion of Virginia and in the northeast corner of North Carolina. These basins drain about 9,073 square miles of area or about ten percent of Virginia and seven percent of North Carolina.

The Chowan-Pasquotank Basins are entirely within the Piedmont and Coastal Plains Physiographic Provinces. Only the most western tributaries exhibit moderately sloping profiles. Streams in the eastern portion of the watershed are flat and traverse much swamp and marshland area.

1/ Planning phases are described on Page 6.

The Chowan River Basin is drained by three major tributaries; the Meherrin, the Nottoway and the Blackwater Rivers. The Nottoway and Blackwater Rivers join at the Virginia-North Carolina State line to form the Chowan River. The Meherrin enters 12 miles downstream. The Chowan River flows in a southeasterly direction until it empties into the west end of Albemarle Sound. The Albemarle Sound area and the North Carolina Outer Banks are called the Pasquotank River Basins area.

The Pasquotank River Basins lies entirely in the Coastal Plain and encompasses a total area of 3,799 square miles within the State of North Carolina, of which approximately 1,100 square miles or 29 percent is covered by water. The area includes Albemarle Sound, Currituck Sound, North River, Pasquotank River, Flatty Creek, Little River, Perquimans River, Yeopim River, Kendrick Creek (Mackeys Creek), Scuppernong River, Alligator River, Croatan Sound, Roanoke Sound and that portion of Pamlico Sound that lies north and east of a line extending from the northeast tip of Ocracoke Island to Sandy Point near Stumpy Point Bay. The three major land resources areas that are included in the study area are the Piedmont, Coastal Plain, and Flat Woods.

Relationship to Other Studies and Programs

A Level "B" River Basins Study for the Chowan-Pasquotank River Basins has been proposed with the Southeastern Basins Inter-Agency Committee (SEBIAC) as the sponsor. Basic data and reports prepared by the USDA will be provided to the SEBIAC for use in its Level "B" study.

The Chowan-Pasquotank River Basins Study will provide an increment to the Virginia State Water Management Plan which is currently being prepared. Water supply studies for the Hampton Roads area currently being made by the Norfolk District, U. S. Army Corps of Engineers (COE). The COE has been authorized by Congress to study the Chowan River Basin and its tributaries and adjacent watersheds for water supply. Water quality and resource studies are annually being made by the states. The USDA's coordination will be accomplished through the USDA FAC. ^{1/} Planning activities will be coordinated with those of other federal and state agencies, planning districts, soil and water conservation commissions, and county planning bodies.

Objectives

The overall purpose of the Chowan-Pasquotank River Basins Study is to provide water and related land resources data to the states so that they may prepare a state water management plan and to suggest alternative solutions to problems identified in the study. The USDA needs the information to develop its going programs. The following objectives will be emphasized during Phases 3 and 4:

^{1/} The FAC is defined on Page 11.

1. To enhance national economic development (NED) by increasing the value of the Nation's output of goods and services and improving national economic efficiency.
2. To enhance the quality of the environment (EQ) by the management, conservation, preservation, creation, restoration, or improvement of certain natural and cultural resources and ecological systems for the benefit of mankind.

Problems, Component Needs and National Objectives

Requesting agency representatives have met with the USDA FAC and have tentatively identified study concerns. The relationship of the problems, component needs and primary objectives are listed in Table 1. County, city and state officials, local organizations, environmental interest groups and other interested individuals will be requested to participate in establishing study concerns of importance in their area. Questionnaires will be mailed out and provided at public meetings in order to identify areas of public concern. Study concerns will then be evaluated by the planning staffs and translated into component needs and elements of work. This Plan of Work will be revised as necessary to reflect identified concerns.

Table 1. Study concerns related to component needs and primary objectives,
Chowan-Pasquotank River Basins

<u>Study Concerns</u>	<u>Component Need</u>	<u>Primary Objective</u>
Land Use, Treatment and Management	Improve use, treatment and management of forest, agricultural and urban land, conserve wetlands, prime and unique farmlands.	NED, EQ
Floodwater Damage	Reduce floodwater damage on agricultural, urban and built-up areas.	NED, EQ
Drainage	Improve drainage on the agricultural bottomland with high production potential and in urban areas which have vector problems.	NED
Irrigation	Provide adequate irrigation water for agricultural lands.	NED
Water Supply Use and Management	Provide water for projected M+I needs and rural needs.	NED
Environmental Quality	Preserve natural aesthetic and scenic features; protect and enhance biological resources and ecosystems; and enhance selected quality aspects of land, water and air.	EQ
Cultural	Preserve and protect historical, archaeological and other unique sites.	EQ
Economic Conditions	Increase agricultural, forestry and mineral production and improve economic and social well being in the region.	NED
Recreation	Enhance outdoor recreational opportunities.	NED
Fish and Wildlife	Protect and enhance fish and wildlife resources.	NED, EQ
Erosion and Sediment	Reduce erosion and sediment damage.	NED, EQ
Land Disposal of Solid Waste	Provide suitable sites for solid waste disposal to meet needs.	EQ
Nonpoint Source Pollution	Reduce pollution from nonpoint sources.	EQ
Low Flow Management	Provide adequate flow to maintain optimum uses of streams.	NED, EQ

General Study Procedures and Work Outline

The Chowan-Pasquotank River Basins have been divided into five subareas or study areas with apparent similar characteristics. See Figure 2.

The study will be conducted in four planning phases as follows:

1. Organization and Setting of Objectives
2. Inventory and Analysis of Socio-Economic and Natural Resource Bases and Identification of Problems and Needs.
3. Development and Evaluation of Alternative Plans
4. Plan Selection

Planning phases will be subdivided into 15 items from the starting point to distribution of the final report. Completion dates are set for each. See Chart 1.

Major activities and work items for Phase 1 are displayed on Table 2 with public involvement items shown on Table 3.

Phase 2 major activities and work items are displayed on Table 4 and public involvement items shown on Table 5.

Study concerns have been identified for the entire basin by state and federal study participants. These concerns and the work items are displayed in Tables 6 through 19. Public involvement will further refine these study concerns and identify priorities for study. Detailed activity schedules will be prepared for each study concern by subarea to facilitate management of Phase 2.

Phases 1 and 2 will be conducted concurrently in each study area as depicted on Chart 1. Phase 2 critical work items have been identified and shown on Chart 1. Due dates for these items have been accounted for in each study concern work outline as they apply.

Meetings will be held with sponsoring agencies and the public at the completion of Phase 2 in each subarea. The purpose of these meetings will be to determine the need for proceeding with Phases 3 and 4 and to establish subarea study priority. Public involvement will reflect public preference and dictate the direction and magnitude of detailed studies which follow. Detailed work outlines and schedules will be prepared for each subarea before proceeding with Phases 3 and 4. Each detailed subarea work outline will have a time frame mutually agreeable with public preferences and sponsoring agencies. USDA agency overall costs are estimated and shown on page 13 by fiscal year, assuming that studies will proceed to completion.

The study could terminate in any subarea after Phase 2 depending on the significance of problems and needs identified by local concerns. Phases 3 and 4 planning activities may be reduced to selected areas within a subarea.

Existing data and information will be used to the extent possible. Data will be compiled as appropriate for reporting purposes.

Phase 1. Organization and Setting of Objectives

General Procedures. This phase of the study will be devoted to organizational and management activities. Coordination procedures will be developed with other planning agencies to avoid duplication of study effort. This includes setting specific objectives as related to component needs, developing a strategy for continuing public involvement throughout the life of the study and preparing a plan of work. Major activities, time requirements and agency responsibilities for work items are itemized in Table 2. The public will be involved to identify public concerns and firm-up study concerns listed in Table 1. Major activities and work items for public involvement are listed in Table 3. The intensity of public involvement will be based on availability and need as determined by sponsoring agencies, local officials and policy committees and the FAC. Phase 1 milestone dates will be at the end of blocks numbered 1 through 5 on Chart 1.

Phase 2. Inventory and Analysis of Socio-Economic and Natural Resource Bases and Identification of Problems and Needs

General Procedures. This phase of the study will include a collection of available data concerning certain water and related land resources and an evaluation of the ability of these resources to meet future needs without planned development. Projections for 1990, 2000 and 2020 will be made by using a linear programming model to estimate future conditions without planned development. Existing publications and data sources will be used. Random samplings and consultation will be the method used if data must be collected. The study will not include area beyond the dune line. Data will be compiled as appropriate and summarized by soil productivity groupings. Data will be displayed by county, hydrologic boundary subareas and state boundary as shown on Figure 2. A summary of major activities and work items are shown in Table 4. Technical data will be compiled with a narrative description for staff use.

The public involvement program will continue through Phase 2 by policy committee meetings and with the public as needed. Major activities and work items for public involvement are listed in Table 5.

The SCS planning staff leader in concert with involved agency or disciplines will prepare detailed activity schedules and establish precedence for each study concern work outline. Study concerns will be related to study areas.

Meetings will be held with the sponsors and cooperating agencies upon completion of the work items in this phase. The purpose will be to determine the need for continuing into Phase 3 and subsequently to Phase 4. The Plan of Work will be revised based on the need to proceed in any or all subareas. Detailed man-day estimates and schedules will be prepared before proceeding to Phase 3.

Phase 3. Development and Evaluation of Alternative Plans

General Procedures. Based on priorities set by the public involvement program and on the inventory data for the study area, specific decisions can be made regarding resource problems and needs. Opportunities will be identified to meet these needs through water and land resource developments. Alternative plans will be developed to optimize elements of the nation's economic development and environmental quality objectives. Other alternative plans will be developed to incorporate elements of the nation's economic development and environmental quality that will meet desires and needs of the region. The beneficial and adverse effects of each alternative selected will be determined in terms of its contribution to the multi-objective approach. Each will be compared to without development alternatives.

Phase 3 major activities and work items are shown on Table 20. Major activities and work items will be revised as needed to keep Phase 3 activities current. Public involvement will be maintained to aid in selecting elements of the preferred plan. Public involvement details are shown in Table 21.

Phase 4. Plan Selection and Implementation

General Procedures. The purpose of Phase 4 is to select a preferred plan and provide information necessary for implementation. Displays of the preferred plan will be prepared and presented to the public. The priorities and preferences will be identified through public participation. These preferences will be incorporated into a final preferred plan that will be published in the final USDA report. The report will include estimates of implementation costs, a recommended schedule for implementation and the opportunities for USDA and other programs to contribute to the preferred plan. Needs for further authorizations to achieve implementation of the plan will also be presented in the report. Phase 4 major activities and work items are shown in Table 22. Public involvement will be maintained throughout this phase in all subareas as needed. Priorities will be mutually established by the policy committees and concerned agencies. Overall cost estimates for Phase 4 are shown on page 13.

Reports

Plan of Work

A plan of work (Phase 1) will be prepared by a work group composed of representatives from each federal and state agency and presented to the USDA Field Advisory Committee (FAC), the N. C. Department of Natural and Economic Resources (DNER), the Bureau of Water Control Management, Virginia State Water Control Board (SWCB) and the North Carolina-Virginia Resources Management Committee for approval and/or endorsement. The soil and water conservation committees will be asked to provide letters of endorsement.

Planning Progress Reports

Each agency will submit planning progress reports at the FAC meetings. Progress will be reported by work items in the Plan of Work. The progress reports will be made part of the FAC minutes for that meeting. Copies of the FAC minutes will be distributed to cooperating state agencies, Northeast Technical Service Center (TSC) 1/ and the Washington Advisory Committee (WAC). 2/ A summary of progress reports will be provided to all interested in the planning subareas.

Interim Report

An interim report compiled for staff use will consist only of the raw data obtained in Phase 2. The report is scheduled for completion by October 31, 1977. It will be used to coordinate information between cooperating agencies. The report will contain inventories of resources, problems, needs and opportunities as related to component needs within the basins and will pull together all information from the basic planning disciplines that have been developed.

Final Report

A final report will be prepared if public involvement indicates a need to proceed through Phases 3 and 4. Preparation of the final report shall begin as soon as sufficient data is gathered to write any one section. The final report will be completed by September 1980. The outline of the final report is as follows:

	<u>Report Outline</u>
Chapter 1	Summary
Chapter 2	Introduction
Chapter 3	Problems and Objectives
Chapter 4	Economic Projections and Environmental Preferences
Chapter 5	Resource Base and Existing Programs
Chapter 6	Future Without Condition
Chapter 7	Needs
	Continued

1/ The TSC is located at Broomall, Pennsylvania. The TSC provides training and specialists in the field of water resources planning.

2/ The WAC is composed of members representing the ERS, FS and SCS at the Washington office.

Report Outline--Continued

Chapter 8	Alternative Plans
Chapter 9	Preferred Plan
Chapter 10	Opportunities for USDA Programs in the Preferred Plan: Development and Impact
Chapter 11	Coordination and Programs for Future Development

Management of the Study

State

The North Carolina Department of Natural and Economic Resources (DNER) is the agency designated to represent North Carolina in water and land resource development activities. The DNER will be the responsible agency through which information will be requested, collected and dispersed for the North Carolina segment of the study area. This agency will work with USDA in coordinating planning activities with other interested federal, state and local agencies. The North Carolina State Soil and Water Conservation Commission will assist as needed with coordination, supplying data, obtaining public participation, attending meetings and will co-sponsor the study.

The Virginia State Water Control Board, Bureau of Water Control Management (SWCB) is the agency designated to represent Virginia in an overall capacity with relation to its water resources development. The SWCB will maintain this responsibility as the central agency through which information will be requested, collected and dispersed for the Virginia segment of the study area. The planning efforts of other interested state and federal agencies will be coordinated with the USDA through the SWCB. The Virginia Soil and Water Conservation Commission will assist as needed with coordination, supplying data, obtaining public participation, attending meetings and will co-sponsor the study.

Local

The soil and water conservation districts; members of regional, municipal, or local planning commissions; rural development committees; local environmental interest groups; individuals and leaders in community and rural affairs will be invited to provide assistance in the study.

Field Advisory Committee

A Field Advisory Committee (FAC) has been established to facilitate participation by the Department of Agriculture (USDA) agencies in the study. Membership of this committee is as follows:

Soil Conservation Service, Chairman
Economic Research Service, Member
Forest Service, Member

Method of Operation. Close coordination will be maintained through the Chairman of the FAC throughout the study so there will be a complete exchange of information to avoid duplication of study effort as the study progresses. Details concerning methodology, criteria, scheduling of survey activities, and all other matters affecting joint participation, will be agreed upon early in the survey. Members will maintain appropriate liaison with the administratively responsible officers of their respective service.

The work of the SCS will be administered through its state office, Richmond, Virginia. The current SCS river basins staff in Virginia and various specialists from North Carolina and Virginia will be assigned to the study on a temporary basis. Technical assistance will be provided by the Northeast Technical Service Center, Broomall, Pennsylvania, and the Northeast Services Cartographic Unit at Hyattsville, Maryland.

The work of the ERS and FS will be administered from their respective offices with a representative assigned to work with the SCS planning staffs. The ERS staff will be headquartered at Broomall, Pennsylvania and the FS staff will be headquartered at Doraville, Georgia.

Meetings. The FAC will hold meetings at three-month intervals until this spacing needs to be reduced or extended. The committee will meet at 10:30 a.m. in the SCS office at 400 N. Eighth Street in Richmond, Virginia, unless specific arrangements are made otherwise. An agenda will be prepared for each meeting. Progress reports, changes in methodology, scheduling or other agreed to items will be included in the minutes. A secretary will be appointed to record the minutes and will circulate a draft copy to all members within ten days.

Public Information Meetings

Public information meetings will be arranged, coordinated, and conducted in the States of North Carolina and Virginia, respectively, by the DNER and the SWCB cooperating with the Soil and Water Conservation Commissions. Public information meetings will be held as necessary, but at least three series of meetings will be held to secure and maintain public participation in the study. The first series of meetings will be held to explain the study and to obtain suggestions for study concerns that may be translated in specific study components. A second series of meetings will be held near the end of Phase 1 to assure the specific public concerns are included. Then a third series of meetings should be held near the end of Phase 2. The purpose will be to present inventory data as related to component needs and to present an appraisal of resource capability to meet

needs without project action. The planning staff will solicit suggestions for the general types of alternative solutions to be considered. Another series of meetings will be held to present alternative solutions and to solicit ideas for the preferred final plan.

Work Group Meetings

Technical study coordination can be maintained with state sponsors through functional work groups. Possible participants include the Corps of Engineers, U. S. Fish and Wildlife Service, Environmental Protection Agency; state agencies such as the Extension Service, Tourist Commissions, Parks and Recreation Commissions, Fish and Wildlife agencies, Departments of Health, Water Control Board, State Planning Offices, Experiment Stations and Forestry Departments.

Work group meetings with federal and state agencies will be scheduled as needed. Work group meetings will be requested and coordinated by the SCS through the appropriate agencies involved. Work groups are contemplated for the following areas of concern: land use, pollution abatement, nonpoint source pollution, fish and wildlife, recreation, economics and erosion and sediment.

Staffing

Headquarters for operation of the overall study will be in Richmond, Virginia. Representatives of the Economic Research Service (ERS) and the Forest Service (FS) will be located in Broomall, Pennsylvania and Doraville, Georgia, respectively.

The Virginia SCS River Basins Staff Leader will have responsibility for coordination of USDA study efforts. General guidance will be provided by the FAC.

The Virginia SCS staff is composed of one river basins staff leader, one hydrologist and one clerk-stenographer. Adequate technical personnel from North Carolina and Virginia will be assigned to collect data to accomplish the objectives of the study. Various technical specialists such as an agronomist, biologist, engineer, economist, geologist, hydrologist, district conservationist, area conservationist, soil scientist and other support personnel provide input as needed.

The ERS staff will be composed of one full-time agricultural economist. Support personnel will be assigned as needed. The FS staff will be composed of one planner, one economist and one hydrologist. Support staff will be assigned as needed.

Schedule Summary

Completion of major planning activities are scheduled as follows:

Determine Objectives and Prepare Plan of Work	April 1977
Inventory and Analysis of Resource Bases, Identification of Needs and Interim Report	January 1979
Development and Evaluation of Alternative Plans	October 1979
Plan Selection and Implementation	March 1980
Draft Report	June 1980
Final Report	September 1980

Funding

Accumulated expenditures and estimates for Fiscal Years 1977, 1978 and 1979 are shown as follows:

Cost Summary by Fiscal Year						
<u>USDA Agency</u>	<u>Accumulated Expenditure</u> 1976 <u>1/</u>		<u>Estimated Cost by Fiscal Year</u>			
			<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
		\$1,000 <u>2/</u>				
ERS	25		50	52	52	25
FS <u>3/</u>	71.2		32.3	32.4	35.1	17.5
SCS, VA	49.8		91	70	60	50
SCS, NC	11.8		25	25	25	20

1/ Actual expenditures through September 1976.

2/ The base year for cost estimates is 1976.

3/ Includes Washington Office assessment.

Sponsors and Co-Sponsors

Sponsors, co-sponsors and other participating agencies will make no direct monetary contribution to the USDA in carrying out USDA activities in the survey. They will, however, provide personnel, material, and information that are available for use in the study.

Approval Sheet

Members of the USDA Field Advisory Committee agree to the general terms and conditions set forth in this Plan of Work for the Chowan - Pasquotank River Basins Study.

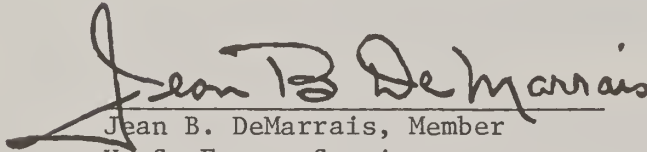
ERS



John E. Hostetler, Member
Economic Research Service
U. S. Department of Agriculture
1974 Sproul Road
Broomall, Pennsylvania 19008

March 17, 1977
Date

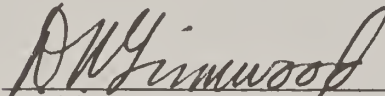
FS



Jean B. DeMarrais, Member
U. S. Forest Service
North Gate Office Park, Rm. 2116
3620 Interstate 85, N.E.
Doraville, Georgia 30340

March 17, 1977
Date

SCS



David N. Grimwood, Chairman
Soil Conservation Service
400 North 8th Street
Richmond, Virginia 23240

March 17, 1977
Date



FIGURE 1

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

CHOWAN-PASQUOTANK RIVER BASIN

Scale 1:750,000





FIGURE 2

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

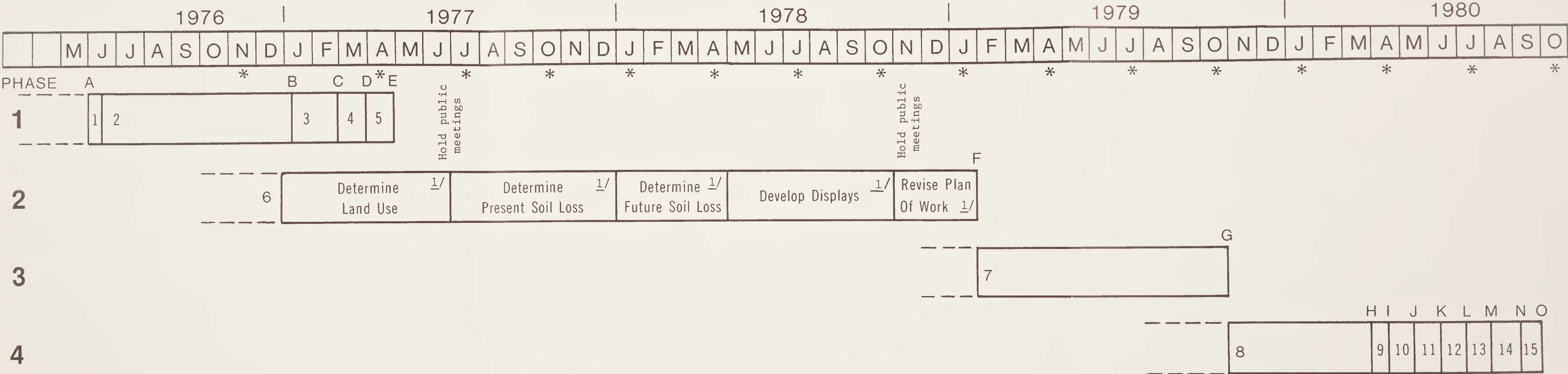
POLICY COMMITTEE AREAS
NORTH CAROLINA — VIRGINIA
CHOWAN-PASQUOTANK RIVER BASIN

Scale 1:750,000



— Sub Areas

CHART 1. SCHEDULE FOR MAJOR ACTIVITIES—CHOWAN-PASQUOTANK RIVER BASINS, NORTH CAROLINA & VIRGINIA
RICHMOND, VIRGINIA



Milestone	Item No.	Description	Milestone	Item No.	Description
A	1.	Start.	H	8.	Evaluate data-assemble displays and develop preferred plan.
B	2.	Prepare draft plan of work.	I	9.	Prepare preliminary draft report.
C	3.	Review and approval.	J	10.	Agency review.
D	4.	Prepare final plan of work.	K	11.	Prepare draft report.
E	5.	Finish and distribute plan of work.	L	12.	Review and approval.
F	6.	Collect data-develop economic data, determine problems and needs, summarize data.	M	13.	Prepare final report.
G	7.	Analyse data-develop alternatives, select elements of preferred plan.	N	14.	Finish report.
			O	15.	Distribute report.

* Regular months for FAC meetings
^{1/} Critical work items in Phase 2

Table 2. Phase 1. Organization and Setting of Objectives Work Outline
Chowan - Pasquotank River Basins

Table 2. Phase 1. Organization and Setting of Objectives Work Outline				Man-days Required by Position and Agency																		
Chowan - Pasquotank River Basins				Work Items	ERS						FS			SCS			:NC :VA			Total Man-days	Duration	Due Date
Major Activities	Responsible Agency(s)	Item No.	Ag. Econ.			Planner	Econ.	P. Ldr.	Typist	So. Cons	DNER	SMCL										
1. Authority to Proceed	SCS,ERS FS	1.	Notify concerned agencies, etc.	1	1			2	2						6	2	1/76					
	ERS,FS SCS	2.	Determine Agency personnel and equipment needs	2	2			4							8	4						
	ERS,FS SCS	3.	Determine general USDA management procedures with sponsoring agencies.	1	1			2	1						5	2						
	SCS,ERS FS	4.	Develop tentative schedules with target dates.	1	1			1							3	1						
	SCS	5.	Prepare agenda and schedule FAC meetings					2	1						3	2						
4. Make Field Reconnaissance	SCS,ERS FS,NC,VA	6.	Prepare progress reports for USDA FAC meetings and attend quarterly as needed.	2	1			2	2	1				1	10	2	11/76					
	SCS,ERS FS	7.	Maintain liaison with other Federal and State agencies. See Table 3, Item 27.																			
	SCS,ERS FS,NC,VA	8.	Organize Basins reconnaissance					5	3	10					18	5						
		9.	Conduct two multi-agency field trips	10	10	10		10	20						75	10						
	SCS,ERS FS	10.	Obtain suitable base maps to facilitate study and report.	5	2	3		5	2						17	5						
5. Obtain Base Maps	SCS	11.	Estimate cartographic services cost. See Summary Table.					1	1					2	1							
	SCS,ERS FS,NC,VA	12.	Determine available data and list sources.	10	4	6	10	1						5	41	10						
Subtotals				32	22	19	44	13	31	16	11	188	Continued									

Table 2. Phase 1. Organization and Setting of Objectives Work Outline
Chowan - Pasquotank River Basins--Continued

Major Activities				Agency(s) Responsible	Item No.	Work Items	Man-days Required by Position and Agency											Duration	Due Date										
							ERS						FS							SCS					:NC:VA				
							Ag. Econ.		Planner	Econ.	P. Ldr.	Typist	So. Cons.	DNER	SWCB	Total Man-days													
7. Develop Public Involvement Plan	SCS,ERS FS	13.	Develop Public Involvement Plans. Hold public meetings. Document and analyse responses. See Table 3 for details.	3				3	3																				
8. Establish Study Concerns	SCS,ERS FS,VA,NC	14.	Establish Study Concerns with sponsoring agencies.	3				3	3																				
9. Establish Component Needs	SCS,ERS FS,NC,VA	15.	Establish component needs for Study Concerns established above.	1				1	1																				
10. Establish Technical Work Group	SCS,ERS FS,NC,VA	16.	Establish Technical Work Group for Economics, F&WL, to develop plan of work and others.	2				2																					
11. Estimate Personal Services Cost. Phase 1 & 2	SCS,ERS FS,NC,VA	17.	Estimate personal services cost, administration and miscellaneous overhead. Summarize man-days estimates and other costs for within agency use. Include in Cost Summary Table 24.	2				2																					
12. Prepare Plan of Work	SCS,ERS FS,NC,VA	18.	Prepare rough draft plan of work, review, revise and make 20 copies.	3				3	2																				
		19.	Prepare preliminary draft plan of work and make 20 copies, review, and respond to comments.	3				3	3																				
		20.	Prepare draft plan of work and make 20 copies.	1				2																					
		21.	Present to FAC, sponsors and interested agencies.	1				1																					
		22.	Review, revise and prepare 20 copies of final draft for agency and state approval.	3				3	2																				
		23.	Estimate printing cost for 300 copies.																										
		24.	Prepare final plan of work.	3				3	2																				
		25.	Print final plan of work. (300 copies)																										
13. Distribute Plan of Work	SCS,ERS FS	26.	Make distribution to sponsors, interested agencies and organizations.	1				1																					
TOTALS				55				46	32																				

Table 3. Phase 1. Public Involvement Work Outline
Chowan - Pasquotank River Basins

Table 3. Phase 1. Public Involvement Work Outline Chowan - Pasquotank River Basins																			
Man-days Required by Position and Agency				Work Items	Item No.	Responsible Agency(s)	Major Activities	ERS : FS : SCS						:NC: VA			Total Man-days	Duration	Due Date
Ag.Econ	Planner	Econ.	Inf. Sp.					P. Ldr.	Typist	A.Cons.	D.Cons.	DNER	SWCB						
					1.	SCS	1. Develop Mailing List	Request Mailing List from each SCS field office, state agency and include organizations, programs and institutions affecting water & land resources planning as needed in Phase 2. 1/			1	1	1	29		32	30	8/76	
					2.	SCS	2. Develop Brochure	Develop outline of salient points to be covered in narrative. Determine types of maps, art work, and photos needed.			2	2				4	2		
					3.	SCS		Develop preliminary draft of text, request maps, photos and art work.			1	1				2	1		
					4.	SCS		Estimate cartographic services cost.			1					1	1		
					5.	SCS,ERS FS		Prepare review draft.		2	2	1				7	2		
					6.	SCS		Respond to comments and print final brochure.			1	1				2	1		
					7.	SCS		Cartographic prepare and print 2000 copies 3½" x 9".				1	1			1	1		
					8.	SCS,NC VA		Make distribution to individuals, organizations, and others, using prepared mailing list with envelopes and stamps through required mail. Estimate materials and franking cost.			1	3		3	3	10	3		
					9.	SCS	3. Develop Slide Talk	Prepare slide talk outline and rough draft of the narrative.			3	2	5			10	5	2/77	
					10.	SCS		Request and obtain needed slides from SCS field office, Federal and State agencies needed to illustrate points mentioned in narrative.			1	1	4	10		16	20		
					11.	SCS		Determine maps, art work, and other illustration needs, prepare drawings and make necessary color slides. Estimate cartographic services cost.			2	1				3	2		
					12.	SCS		Select color slides and refine narrative in final form.			2	3	1			6	3	3/77	
					13.	SCS		Present to FAC for preview and approval.				1				1	1		
								1/ Consolidate into a master list and request agencies to submit changes as they occur.								Continued			
								Subtotals	2	2	6	18	17	5	39	3	95		

Table 3. Phase 1. Public Involvement Work Outline
Chowan - Pasquotank River Basins--Continued

Chowan - Pasquotank River Basins--Continued				Man-days Required by Position and Agency												
Major Activities	Responsible Agency(s)	Item No.	Work Items	ERS : FS : SCS :NC :VA										Total Man-days	Duration	Due Date
				Ag. Econ.	Planner	Econ.	Inf. Sp.	P. Ldr.	Typist	A. Cons.	D. Cons.	DNER	SWCB			
4. Develop News Articles	SCS	14.	Prepare and provide study status information to Field Offices.					5	4					9	5	4/77
	SCS	15.	Draft news releases by county and/or field office area.				10			1	10			21	10	
	SCS,FS, ERS,	16.	Prepare draft questionnaire to obtain public response as to problems and needs.	1	1			1	1					4	1	4/77
	SCS	17.	Review and respond to comments.	1	1			1	1					4	1	
6. Train Key SCS and State Agency Personnel in Public Involvement Procedure	SCS,ERS, FS,VA NC	18.	Develop agenda and arrange for three meetings.	2	2	2		3	2	1	6			18	3	
		19.	Assemble equipment and displays needed.					1	1					2	1	
		20.	Conduct three training sessions. Determine need and number of public meetings to be held by subarea. See Figure 2. Consult with VA-NC Advisory Committee already in effect.	5	5	5		5	2		15	2	3	42	5	
		21.	Determine adverse situations.					2		1	5			8	2	
7. Hold Public Meetings		22.	Determine methods of resolving conflicts and resolve known conflicts prior to public meetings.					10	1	10				21	10	
	SCS,FS, ERS,NC,VA	23.	Determine agenda, displays and location for meetings by subareas, determine equipment needed. Schedule five meetings. Determine cartographic cost.	10	10			10	5	3	5	5	5	53	10	
		24.	Provide public notices via news articles, releases through appropriate media.					3				8		11	5	
		25.	Attend public meetings. Each agency make short presentation. Elect policy committees, document list of participants. Request participation.	5	5			5		3	10	2	3	33	5	
		26.	Analyse public response. Public response must be in writing and properly documented.	3	3			3				1	2	12	3	
																Continued
Subtotals			27	27	7	10	49	16	10	61	18	13	238			

Table 3. Phase 1. Public Involvement Work Outline
Chowan - Pasquotank River Basins--Continued

Man-days Required by Position and Agency																		
Major Activities	Responsible Agency(s)	Item No.	Work Items	ERS : FS : SCS : NC:VA														
				Ag.Econ.	Planner	Econ.	Inf.Sp.	P. Ldr.	Typist	A.Cons.	D.Cons.	DNER	SWCB	Total Man-days	Duration	Due Date		
8. Meet With Sponsor(s) Policy Committees, Interested Organizations and Agencies	SCS,FS ERS,NC VA	27.	Determine agenda, location for meetings by subareas, determine equipment needed. Schedule necessary meetings.	2	2			5	2	2	4	1	2		20	5		
		28.	Attend meeting. Use brochures, slide talks. Each agency make short presentation as needed. Develop list of participants and document response.	5	5			5	5	5	10	2	3		40	5		
		29.	Analyse public response. Public response must be in writing and properly documented.	3	3			3	2	1	2	1	2		17	3		
Total				39	39	7	16	80	42	23	116	25	23		410		4/77	

Table 4. Phase 2. Inventories, Analyses and Identification of Problems and Needs
Chowan - Pasquotank River Basins

Chowan - Pasquotank River Basins				Man-days Required by Position and Agency																	
Major Activities	Responsible Agency(s)	Item No.	Work Items	ERS:			FS			:			SCS			:NC:VA			Total Man-days	Duration	Due Date
				Ag. Econ.	Planner	Econ.	Hydr.	P. Ldr.	Typist	A. Cons.	D. Cons.	So. Cons.	DNER	SWCB							
1. Starting Point	SCS	1.	Authority to proceed. Notify interested agencies.						2	2								4	2	1/77	
2. Develop Management Procedures	SCS,ERS FS	2.	Determine general USDA management procedures with sponsoring agencies.	3	3				3									1	1	3	
	SCS,ERS FS,NC,VA	3.	Prepare agenda and schedule FAC meetings quarterly, 2/77, 5/77, 8/77, or as needed.	2	2				2	2								1	1	2	
	SCS,ERS FS,NC,VA	4.	Prepare progress reports and attend USDA FAC meetings and record minutes.	5	5				5	5								3	3	5	
3. Public Involvement	SCS,ERS FS,NC,VA	5.	Develop public involvement needs, questionnaires, schedules, news releases, agenda, hold meetings. See Table 5.																		
4. Analyze Public Response	SCS,ERS FS,NC,VA	6.	Analyse public response and determine results of questionnaires.	3	5	3			5	2								1	1	24	
5. Detailed Schedules	SCS,ERS FS,NC,VA	7.	Develop detailed schedules reflecting mutual public and private interest for subareas 1, 2, 3, 4 and 5.	3	3				3	3								3	3	18	
6. Data Sources	SCS,ERS FS,NC,VA	8.	Determine data sources and prepare list for inter-agency use.	2	2	1			1	2	2							2	2	12	
7. Develop Inventory Forms	SCS,ERS	9.	Prepare inventory forms. Use examples from other studies.	1					2	1									4	2	
8. Hold Orientation Meetings	SCS,ERS FS	10.	Hold orientation meetings at three area offices with field office staff.	1	1				3	1	1	15							22	3	
9. Make Inventories	SCS,ERS FS,NC,VA	11.	Make inventories, determine problems and needs. See Tables 6 - 19.																		
10. Analyze data	SCS,ERS FS,NC,VA	12.	Analyse Data. See Tables 6 - 19.																		
11. Maintain Liaison Activities	SCS,ERS FS	13.	Maintain liaison activities with other Federal and State agencies.	3	3				3	1									10	3	
Sub Totals				25	22	1	1	30	19	1	15	5						11	11	141	
																		Continued			

Table 4. Phase 2. Inventories, Analyses and Identification of Problems and Needs
Chowan - Pasquotank River Basins--Continued

Table 4. Phase 2. Inventories, Analyses and Identification of Problems and Needs Chowan - Pasquotank River Basins--Continued				Man-days Required by Position and Agency																		
Major Activities	Responsible Agency(s)	Item No.	Work Items	ERS:							FS			SCS			:NC:VA			Total Man-days	Duration	Due Date
				Ag. Econ.	Planner	Econ.	Hydr.	P. Ldr.	Typist	A.Cons.	D.Cons.	So.Cons.		DNER	SWCB							
12. Compile Basic Data	SCS,ERS FS,NC,VA	14.	Compile basic data and make narrative summary outline	1	6	4	4	4	10							1	1	31	1			
		15.	Prepare rough draft basic data report for review.	2	4			3	5	5							2	3	19	6		
		16.	Prepare draft report.	2	4			4	4	4							2	3	19	4		
		17.	Prepare final draft and print 100 copies.	2	4			3	5	5							2	3	19	10	10/78	
		18.	Present basic data report to sponsors.	1	1	1		2	1	1							2	3	11	2		
14. Distribute Basic Data	SCS	19.	Make distribution to interested agencies.															3	2	1/79		
15. Determine Need to Continue Study Phases	SCS,ERS FS,NC,VA	20.	Determine need to continue into Study Phases 3 and 4. Council with the sponsors, policy committees and others. See Table 5, Work Items 5, 6, 7 and 8.	1	1	1		1	1							1	3	9	1	11/78		
		21.	Revise and update plan of work for planning Phases 3 and 4.																			
Totals				34	42	7	5	48	47	1	15	5				21	27	252				1/79

Table 5. Phase 2. Public Involvement Work Outline
Chowan - Pasquotank River Basins

Chowan - Pasquotank River Basins				Man-days Required by Position and Agency																	
Major Activities	Responsible Agency(s)	Item No.	Work Items	ERS : FS :										SCS			:NC :VA		Total Man-days	Duration	Due Date
				Ag. Econ.	Planner	Econ.	Inf. Sp.	P. Ldr.	Typist	A. Cons.	D. Cons.	DNER	SWCB								
1. Distribute Questionnaire	SCS, NC, VA	1.	Distribute questionnaire developed in Phase 1 to individuals, organizations and others. Use mailing list prepared in Table 3.					2	3								5	3	4/77		
		2.	Stamp and frank 2000 envelopes and include form letter.																		
		3.	Prepare and provide summary study status information to SCS field offices.					5	3	1					4	4		8	4		
		4.	Draft news release by county and/or field office area and submit to news media.	1	1		5	5	1	1	10							24	5		
3. Council with Sponsors, Special Interest Groups and Policy Committees	SCS, ERS FS, NC, VA	5.	Schedule meeting with sponsors, special interest groups, policy committees as needed in five subareas as determined in Table 3, Work Item No. 20.	5	5			5	5					5	5		30	5			
		6.	Provide public notices, and news releases through appropriate media for each meeting.	3	3			3	3	1	6							19	3		
4. Hold Public Meetings	SCS, ERS FS, NC, VA	7.	Determine agenda, locations for meetings, displays and equipment needs for each meeting.	3	3			3	3								12	3			
		8.	Attend meetings, develop list of participants, record minutes and document responses.	3	3			3	3	2	10				3	3		30	3		
		9.	Develop agenda, determine location for meetings, schedule necessary meetings, determine displays and equipment needs. Determine cartographic costs.	5	5			10	5	5	10				2	2		44	10	10/78	
		10.	Provide public notices and news releases through appropriate media for each meeting.															31	10		
		11.	Attend meetings in subareas 1,2,4 and 3,4 and 5. Each agency to make short presentation. List participants and document responses.	5	5			5	5	5	10				5	5		45	5	11/78	
Totals			25	25		15	46	36	16	56						19	19	257		11/78	

Table 6. Phase 2. Land Use, Treatment & Management Work Outline
Chowan - Pasquotank River Basins

Man-days Required by Position and Agency																			
Major Activities	Responsible Agency(s)	Item No.	Work Items	ERS : FS : SCS															
				Econ.	Ag.Econ.	Ag.Assst.	Prog.	Stat.	Planner	Econ.	P. Ldr.	Typist	So.Scien	So.Cons.	Geol.				
1. Establish Soils Productivity Groups	SCS,ERS	1.	Inventory soil survey data. Prepare soils interpretations for selected uses and establish soils productivity groups (SPG) in VA consistent with NC groupings.	30	3	30						2	1	20			86	30	2/77
2. Inventory Land Resources	SCS,ERS FS	2.	Determine land uses, delineate land and water areas and identify ownership patterns. Prepare tables.	8	42	18	20	10	20		2	1		80			201	42	6/77
3. Inventory Land Treatment Data by SPG	SCS,ERS FS	3.	Determine type and quantity applied to date and cost of untreated areas. Effect of land treatment applied to date on erosion and sediment production.	15	8				27		10	5	10	110	20		205	30	4/77
4. Inventory Organizations, Programs and Institutions	SCS,FS	4.	Inventory organizations, programs and institutions affecting water and land resources and compile a list.						1		2	2			5		10	10	4/77
5. Identify Forest Types	FS	5.	Identify forest types using available data and field inspections.						7								7	7	6/77
6. Identify Trends in Land Use Changes	ERS,FS	6.	Identify trends in land use changes between natural areas, urban agricultural and commercial forestry uses.	28	41	18				3							90	28	7/77
7. Identify Prime and Unique Farmland	SCS,ERS	7.	Use available soils data, consult with district conservationist and local organizations.	9							10	5	70	70			164	30	10/77
8. Displays	SCS,ERS FS	8.	Develop maps, tables and charts to display data collected in Items 1 through 7. Estimate cartographic services costs. Maps may include: generalized soil map, land resource map, land use map and geology.	2	3				3		5	3		5			21	5	11/77
Totals				56	39	50	50	10	58	3	31	17	100	270	20		784		11/77

Table 7. Phase 2. Floodwater Damage Work Outline
Chowan - Pasquotank River Basins

Major Activities	Responsible Agency(s)	Item No.	Work Items	Man-days Required by Position and Agency												Total Man-days	Duration	Due Date
				Ag. Econ	Ec. Asst.	Stat.	Planner	Econ.	Econ.	P. Ldr.	Engr.	Hydr.	So. Cons.	DNER	SWCB			
1. Collect Hydrologic Data	SCS, ERS	1.	Determine flood stage, discharge and area inundated by 100 and 500-year frequency flood event from data on general questionnaire.		8					2		20		20	10	60	20	10/77
2. Determine Flood Plain Land Use	SCS, ERS FS	2.	Determine flood plain land use for present conditions and future conditions without plan conditions. Determine market values.		16	5		8		2	20	40	80			171	40	10/77
3. Determine Flood Damages	SCS, ERS FS	3.	Determine types and amount of flood damages for present and future without conditions including: a. crop and pasture b. residential c. commercial d. industrial e. transportation f. utilities g. other	3	2	3		40		1						49	40	1/78
Totals				3	2	24	8	8	8	40	5	20	6080	20	10	280		1/78

Table 8. Phase 2. Drainage Work Outline
Chowan - Pasquotank River Basins

Table 8. Phase 2. Drainage Work Outline Chowan - Pasquotank River Basins				Man-days Required by Position and Agency																								
Major Activities	Responsible Agency(s)	Item No.	Work Items	ERS : FS :										SCS							Total Man-days	Duration	Due Date					
				Ec. Asst.	Stat.	Planner	Econ.	Hydr.	Econ.	P. Ldr.	Typist	Engr.	A. Cons.	D. Cons.	So. Cons.													
1. Inventory Land Drainage Conditions	SCS	1.	Determine land adequately and inadequately drained. Inventory forms.									5	5	17	3	70									100	30	10/77	
2. Prepare Map and Tables Showing Wetness Hazard	SCS,ERS FS	2.	Prepare map display and tables. Delineate forest cover types and conditions. Show wetness hazard by land resource areas and land use. Delineate soil and indicate wetness hazard.	5	5	4						2	1	3										17	37	5	11/77	
3. Inventory and Classify Channel Systems	SCS,ERS	3.	Inventory and classify existing channel systems for adequacy, type and flow conditions as per Watersheds Memo SCS 118.	5	5							5	5	20		20									60	20	11/77	
4. Determine Effects of Inadequately Drained Land	SCS,ERS FS	4.	Determine effects of inadequately drained land on production cost and crop yields. Consult with farmers and extension service.	10				5	4	35	2	4			1	5	5								71	35	11/77	
Totals				20	10	4		5	4	35	14	15	40			4	95								22	268		11/77

Table 9. Phase 2. Irrigation Work Outline
Chowan - Pasquotank River Basins

Major Activities	Responsible Agency(s)	Item No.	Work Items	Man-days Required by Position and Agency										Total Man-days	Duration	Due Date
				Ag. Econ.	Ec. Asst.	Stat.	P. Ldr.	Typist	Engr.	Econ.	SCS			NC	VA	
1. Determine Existing Water Supply	SCS, NC, VA	1.	Inventory existing water supply and quality.				1	5	10	2				12	20	10/10/77
2. Inventory potential reservoir sites for water storage	SCS, ERS	2.	Prepare listing of sites with potential storage in acre feet.		20			5	10	2						20/10/77
3. Prepare Displays and Determine Cartographic Cost	SCS	3,	Prepare appropriate displays for Items 1 and 2. Estimate cartographic cost.				1	1	3							3/10/77
		4.	Cartographic, prepare final maps and print.				1	1								50/11/77
Totals						20	3	12	23	4				12	20	11/77

Table 11. Phase 2. Environmental Quality Work Outline
Chowan - Pasquotank River Basins

Major Activities	Responsible Agency(s)	Item No.	Work Items	Man-days Required by Position and Agency									
				ERS	:	FS	:	SCS	NC :VA	So. Cons.	DNER	SWCB	Total Man-days
1. Identify Point Sources of Pollution	SCS, NC VA, ERS	1.	Determine sources and causes of land, air and water pollution by county, acres, stream miles. Locate on a map.					1	1	2	50	40	94
2. Inventory Water Sampling Stations	NC, VA	2.	Make a list showing location and type of water sampling stations.								5	5	10
3. Determine Water Quality Values	SCS, NC VA	3.	Determine water flow and quality from water sampling stations after they have been located for streams, seashores, sounds, bays, lakes and ground water.							2	5	5	12
4. Identify State Standards	NC, VA	4.	Obtain quality standards available for each stream from state agency.								5	5	10
5. Appraise Ground Water Suitability	SCS	5.	Appraise ground water suitability, quality, and quantity for all uses. Prepare maps showing major aquifers.							2	5	5	12
6. Indicate Turbidity in Known Turbid Surface Waters	NC, VA	6.	Determine cause, degree, duration and extent of turbidity.								5	5	10
7. Inventory Significant Waste Disposal Systems	SCS, NC VA	7.	Identify significant systems of sewage, animal and solid waste disposal. Determine approximate waste load by county and areas suitable for sewage disposal. Locate on a map.					1	1	10	5	5	22
8. Describe Other Environmental Components	SCS, ERS NC, VA, FS	8.	Inventory and locate: a. threatened and endangered plant and animal species, b. unique beauty, scenic and wilderness areas, c. area especially noted for their aesthetic values.	5		8		1	1	10	5	5	35
9. Provide Displays	SCS, ERS NC, VA, FS	9.	Provide suitable maps, tables to display above items.			1		3	3	5	5	5	23
Totals				1	5	9		6	6	17	14	90	228
													10/77

Table 12. Phase 2. Cultural Work Outline
Chowan - Pasquotank River Basins

Major Activities	Responsible Agency(s)	Item No.	Work Items	Man-days Required by Position and Agency										Total Man-days	Duration	Due Date
				FS	:	SCS	:	NC:VA	DNER	SWCB						
1. Describe Cultural Environmental Components	SCS, FS NC, VA	1.	Describe environmental components of: a. historical sites b. archaeological sites c. unique sites (1) agricultural (2) forest	4		1	1	12		8				34	12	10/77
2. Prepare Displays	SCS, FS NC, VA	2.	Prepare appropriate displays such as maps, tables or charts.	1		1	1	3		2				10	3	11/77
Totals				5		2	2	15						44		11/77

Table 13. Phase 2. Economic Conditions Work Outline
Chowan - Pasquotank River Basins

				Man-days Required by Position and Agency																		
Major Activities	Responsible Agency(s)	Item No.	Work Items	ERS						FS					SCS				:NC :VA	Total Man-days	Duration	Due Date
				Ag. Econ.	Stat.	Ec. Asst.	Prog.	Planner	Geol.	P. Ldr.	Typist	Econ.	DNER	SWCB								
1. Inventory Human Resources	ERS	1.	Inventory human resources: <u>1/</u> a. population sectors (urban & rural) b. determine age, education and racial distribution.	3	5													8	5	4/77		
2. Determine Agricultural Production and Trends	ERS, SCS	2.	Determine agricultural production and trends. <u>1/</u> a. current land use resource inventories by SPG (crop) and pasture, forest and other, b. commodities-describe changing structure of agriculture, including number, tenure, size of farm firm, capital investments and farm sales.	52	20	64	30				1	1	10					178	64	4/78		
3. Display Agricultural Adjustment and Social Well Being	ERS	3.	Display agricultural adjustment and social well being. County census data will be aggregated by subregions. <u>1/</u>	2	3													5	3	4/77		
4. Determine Forestry Production and Trends	FS	4.	Provide forestry production and trends by acreage, percent commercial, volume of sales, volume of growth. Inventory forest products industries. <u>1/</u>					15										15	15	10/77		
5. Determine Mineral Production and Trends	FS, SCS NC, VA	5.	Indicate value of minerals produced, type and location of mineral operations, location of mineral deposits and potential productions. <u>1/</u>	4				9		10	1	1	10	18	20			73	20	4/77		
6. Determine Other Trends in Economic Development	ERS	6.	Determine other trends in economic development. Develop data in standard industrial classes. Shift-share analysis will clarify employment trends. Display the following manufacturing data: <u>1/</u> a. specialization and volume of major classes, b. major water using industries, c. potential and expected growth of major industries.	4	20													24	4	4/77		
			<u>1/</u> Base year will be 1976. Projections from the LP will be for 1990, 2000 and 2020. Data will be displayed by specified subareas.																			
Totals				68	24	97	30	24		10	2	2	20	18	20			315		4/78		

Table 14. Phase 2. Recreation Work Outline
Chowan - Pasquotank River Basins

Major Activities	Responsible Agency(s)	Item No.	Work Items	Man-days Required by Position and Agency										Total Man-days	Duration	Due Date
				ERS	FS	Planner	Stat.		P. Ldr.	Typist	Biol.		DNER	SWCB		
1. Inventory Present Land and Surface Water Available For Recreation	SCS, NC VA	1.	Inventory present land and water surface available by county and study area: a. use b. area in acres c. ownership (public or private)						1	1	5		1	2	10	5 6/77
2. Project Future Surface Waters and Land Available For Recreation	SCS, ERS FS, NC VA	2.	Determine proposed planned increase and projected increases or loss of recreation surface water and land.	10		5					5		1	2	23	10 10/77
3. Inventory Present and Future Water and Land Available For Recreation Facilities	SCS, FS NC, VA	3.	Develop data by county and study area. Determine future plans for recreation facilities.		2						5		1	2	10	5 10/77
4. Determine Present and Future Outdoor Recreation Demands and Needs	SCS, ERS NC, VA	4.	Determine demands and needs for recreation activities by county and study area. Develop map to establish counties which need additional recreation development.	5						10			1	2	18	10 11/77
5. Prepare Displays	SCS, ERS NC, VA	5.	Place all items above on one map as appropriate. Cartographic prepare final and print.	10					2	1	5		1	2	21	10 11/77
Totals				5	20	7			3	2	30		5	10	82	11/77

Table 15. Phase 2. Fish and Wildlife Work Outline
Chowan - Pasquotank River Basins

Chowan - Pasquotank River Basins				Man-days Required by Position and Agency															
Major Activities	Responsible Agency(s)	Item No.	Work Items	ERS :						FS :			SCS :		:NC:VA		Total Man-days	Duration	Due Date
				Econ.			Planner	P. Ldr.	Typist	Biol.	DNER	SWCB							
1. Organize Work Group	SCS,ERS FS,NC,VA	1.	Notify interested agencies, schedule a meeting, request participation and establish working procedures and data needs.	2			2	3	1	5		2	2				17	5	6/76
2. Inventory Aquatic and Terrestrial Habitat	SCS,ERS FS,NC,VA	2.	Classify wetland types using existing data. Inventory streams, rivers, lakes and other aquatic habitat. Develop terrestrial habitat system, maps, and corresponding tables, ADP-MIADS, etc.	2			8			30		7	1				48	30	10/77
3. Identify Fish and Wildlife Populations	SCS,FS NC	3.	Collect fish and wildlife population data by county and study area. Determine residential and migratory species, population levels, and relate species to habitat types.				3			10		4					17	10	10/77
4. Determine Present Demand for Hunting, Fishing, and Nature Study	SCS,FS NC	4.	Project demands and needs for consumptive and non-consumptive usage.				3			20		5					28	20	10/77
5. Identify Problems	SCS,ERS NC	5.	Survey and analyse above data, determine problems, consult with other agencies and interested groups. Change in land use patterns such as: a. enlargement of agricultural fields by clearing and of hedge rows and forest land, b. increased recreational pressure and need on fish and wildlife resources. Determine second home development points, c. nonpoint source pollution, and d. coastal development.	10						20		5					35	20	10/77
6. Prepare Displays	SCS,NC	6.	Prepare map overlays of soil associations and land use. Estimate cartographic cost. Cartographic prepare final displays and print.							15		3					18	15	11/77
Totals				14			16	3	1	100		26	3				163		11/77

Table 16. Phase 2. Erosion and Sediment Work Outline
Chowan - Pasquotank River Basins

				Man-days Required by Position and Agency																		
Major Activities	Responsible Agency(s)	Item No.	Work Items	ERS :										SCS :				:NC:VA		Total Man-days	Duration	Due Date
				Ag. Econ.	Ec. Asst.	Stat.	Planner	Econ.	Hydr.	P. Ldr.	Econ.	Geol.	SR. Cons.	DNER	SWCB							
1. Calculate Present Soil Loss	SCS, ERS VA, NC	1.	Determine present soil erosion rates by SPG in tons per acre per year for the following categories: <u>1/</u> a. sheet erosion (1) cropland (2) grassland (3) other b. gully c. stream bank d. roadside e. flood plain	3	3	10				1		40	20	1	2	80	80	12/77				
2. Calculate Future Soil Loss	SCS, ERS FS, VA	2.	Determine present soil erosion rates as listed in 1.a above that is applicable to forest land.	10	7		4		52						1	74	52	4/78				
	SCS, ERS FS, VA	3.	Determine future land use and effects on on-going programs. Determine soil erosion rates by USLE as in 1.a above for future land use conditions considering on-going programs. Determine soil erosion rates as in 1.b above for future land use conditions considering on-going programs.	10	7				1			10			1	29	10	4/78				
	SCS, ERS FS, VA	4.	Using data on erosion generated above, determine present and future sediment yields by hydrologic units and subareas			5			1			10			1	17	10	8/78				
4. Determine Physical and Monetary Damage of Erosion to Land in the Basin	SCS, ERS FS, VA	5.	Using projected erosion from 1 and 2 above, determine physical and monetary loss due to loss of production of the eroded areas of the basin.	2	2			9			10	10			2	35	10	5/78				
5. Determine Physical and Monetary Damage of Sediment.	SCS, ERS FS, VA	6.	Using data developed in Item 4 above and field interviews, determine physical and monetary damages of sediment to down stream reservoirs, flood plains, navigable channels, urban areas, and highways, roads and bridges for selected areas.	2	2	10	4	6			10				2	36	10	9/78				
6. Prepare Displays	SCS, ERS VA	7.	Prepare maps and tables as appropriate to display the data developed in Items 1 through 5 above. Estimate cartographic cost.		10					2		10	5		1	28	10	10/78				
			<u>1/</u> (SPG) Soil productivity groupings.																			
			Totals	27	31	25	8	15	54	3	20	80	25	1	10	299		10/78				

Table 17. Phase 2. Land Disposal of Solid Waste Work Outline
Chowan - Pasquotank River Basins

Major Activities	Responsible Agency(s)	Item No.	Work Items	Man-days Required by Position and Agency										Total Man-days	Duration	Due Date
				So.Sc.	So.Cons.	P. Idr.	Typist							:NC :VA		
1. Determine Land Use Suitability for Solid Waste	SCS,NC VA	1.	Determine appropriate soils characteristics for solid waste disposal.	5		1	1							2	3	6/77
2. Inventory Potential Sites in the Basins Suitable for Solid Waste Disposal	SCS,NC VA	2.	Select suitable soils by county using general soils suitability map developed in Table 6.		5	1	1							2	3	2/78
3. Determine Effects on Underground Water Pollution	SCS,NC VA	3.	Determine effects of solid waste disposal on underground water pollution.		5	1	1							2	2	2/78
4. Prepare Displays	SCS,NC VA	4.	Prepare overlay of soil map showing soil suitability for solid waste disposal. Determine cartographic costs.		2	1	1							2	1	3/78
Totals				5	12	4	4							8	9	3/78

Table 18. Phase 2. Nonpoint Source Pollution Work Outline
Chowan - Pasquotank River Basins

Table 18. Phase 2. Nonpoint Source Pollution Work Outline Chowan - Pasquotank River Basins				Man-days Required by Position and Agency															
Major Activities	Responsible Agency(s)	Item No.	Work Items	ERS			FS			SCS			:NC			:VA	Total Man-days	Duration	Due Date
				Ag. Econ.	Ec. Asst.		Planner	Hydr.	Geol.	P. Ldr.	Typist	So. Cons.	Hydr.	DNER	SWCB				
1. Review Existing Data	ERS,FS SCS,NC VA	1.	Review Sec. 303,E plans and any existing 208 plans in the North Carolina State University Study.	13	8		9	13	10	3	3	60	6	10	40	175	10/78		
Totals				13	8		9	13	10	3	3	60	6	10	40	175		10/78	

Table 19. Phase 2. Low Flow Management Work Outline 1/
Chowan - Pasquotank River Basins

Chowan - Pasquotank River Basins				Man-days Required by Position and Agency													
Major Activities	Responsible Agency(s)	Item No.	Work Items	SCS								:NC:VA		Total Man-days	Duration	Due Date	
												Hydr.	Bio.				DNER
1. Determine if Water Uses are Restricted During Low Flow Periods	SCS,NC,VA	1.	Determine low flow problem and identify needs in ac. ft. at strategic points for the following: fish and wildlife, navigation, recreation, water supply, health conditions, aesthetics and water quality.							10	10	15	10	45	10	10/77	
		2.	Collect data obtained in Tables 10, 11, 14 and 15 and analyse.								5	5	10	10	30	10	
		3.	Determine low flow needs to prevent salt water intrusion.										15	10	25	10	
2. Determine Minimal Discharge Requirements to Prevent Salt Water Intrusion	NC,VA																
			1/ Work will be limited to a literature search of existing data.														
			Totals								15	15	40	30	100		10/77

Table 20. Phase 3. Development and Evaluation of Alternative Plans Work Outline
Chowan - Pasquotank River Basins

Major Activities	Responsible Agency(s)	Item No.	Work Items	Man-days Required by Position and Agency										Total Man-days	Duration	Due Date
1. Management	ERS, FS SCS	1.	Determine general USDA management procedures with sponsoring agencies.													
	"	2.	Develop tentative schedules with target dates.													
	SCS	3.	Prepare agenda and schedule FAC meetings.													
	SCS, ERS FS, NC, VA	4.	Prepare progress reports for USDA FAC meetings and attend quarterly as needed.													
	SCS, ERS FS	5.	Maintain liaison with other Federal and state agencies.													
2. Identify and Formulate Plans	SCS, ERS FS, NC, VA	6.	Formulate technically feasible alternative plans using complementary plan elements as building blocks. Prepare one plan emphasizing NED, one plan emphasizing EQ and one or more plans representing a mix of the two.													
3. Evaluate Benefits and Costs of Possible Plan Elements	"	7.	Considering present and future needs, evaluate plan elements. Determine monetary benefits and cost or positive and negative effects where monetary values cannot be assigned. Show future conditions without a plan to be implemented.													
4. Prepare Alternative Plans	"	8.	Prepare alternative plans for presentation to the public and others.													
5. Test Alternative Plans	"	9.	Test each alternative plan for acceptability, effectiveness, efficiency and completeness.													
6. Public Involvement	"	10.	Develop public involvement plan. Develop schedules, news releases, agenda and hold meetings. See Table 21.													
7. Prepare Displays and Accounts	"	11.	Prepare displays and accounting systems for each alternative as described in the multi-objective guidelines.													
8. Determine Public and Private Interests	"	12.	Identify, clarify and resolve conflicts within and between alternatives.													
	"	13.	Select elements for the preferred plan based upon public interest and priorities.													
Totals																10/79

Table 21. Phase 3. Public Involvement Work Outline
Chowan - Pasquotank River Basins

Chowan - Pasquotank River Basins				Man-days Required by Position and Agency																	
Major Activities	Responsible Agency(s)	Item No.	Work Items	ERS		FS		:		SCS				:NC		:VA		Total Man-days	Duration	Due Date	
					Ag. Recon.		Planner		P. Ldr.		Typist		Inf. Sp.		So. Cons.		Engr.				
1. Develop Brochure	SCS,ERS FS,NC,VA	1.	Develop brochure outlining alternative plans. Show future production without any plan implementation. Distribute via mailing list with Item 2.	1			1				4	2	2				1	1	12	5	
2. Develop Questionnaire	"	2.	Prepare review draft, respond to comments and prepare final draft. Print 2000 copies and make distribution via mailing list.	1			1				3	2	2				2	2	11	3	
3. Develop News Articles	SCS,NC VA,ERS,FS	3.	Prepare and provide study information to field offices.								5	5							10	5	
4. Develop Displays	SCS,ERS FS,NC,VA	4.	Draft news releases by county and/or field office area.	1			1				1	1	6	12					22	6	
5. Develop Slide Talk	"	5.	Develop displays showing alternative plans. (Tables, charts, maps, etc.)	1			1				3	3					10	1	20	10	
		6.	Develop talk outline, obtain color slides of scenes and charts as required in agenda for public meetings in Items 9 and 10 below.	1			1				2	2					1	1	10	2	
6. Council with Special Interest Groups, Policy Committees	"	7.	Schedule meetings with special interest groups, policy committees as needed in 5 subareas.	1			1				5	5					1	1	20	5	
	"	8.	Determine agenda, locations for meetings and equipment needs.	1			1				2	2					1	1	14	2	
	"	9.	Provide public notices, and news releases through appropriate media.	1			1				2	2					1	1	18	2	
	"	10.	Hold meetings and analyze citizen response.	5			5				5	5					5	5	50	5	
7. Hold Public Meetings	"	11.	Determine agenda, location for meetings by subareas and equipment needed. Schedule five meetings.	1			1				5	5					1	1	19	5	
	"	12.	Use brochures, slide talks and speech aids. Each agency make short presentation.	1			1				1						1	1	5	1	
	"	13.	Provide public notices via news articles, releases through appropriate media.	1			1				3	2					1	1	14	3	
	"	14.	Hold meetings and analyze citizen response.	5			5				5	5					5	5	35	5	
Totals				21			21				46	41	8	71	10	21		21	260	10/79	

Table 22. Phase 4. Plan Selection and Implementation Work Outline
Chowan - Pasquotank River Basins

Major Activities	Responsible Agency(s)	Item No.	Work Items	Man-days Required by Position and Agency										Total Man-days	Duration	Due Date
1. Prepare Outline of Preferred Plan	SCS, ERS FS, VA, NC	1.	Prepare preferred plan including all elements selected in Phase 3.													3/80
2. Prepare Displays	"	2.	Prepare displays for preferred plan and accounting systems as described in multi-objective guidelines.													6/80
3. Involve Public	"	3.	See Table 23.													3/80
4. Determine Public and Private Interest	"	4.	Analyse questionnaire and public response.													
5. Identify, clarify and resolve conflicts	"	5.	Identify and resolve conflicts.													
6. Select Elements for Final Plan	"	6.	Select elements for final plan based on public preferences and include in draft report.													
7. Prepare Draft Report	"	7.	Prepare draft report, send out for review and concurrence to concerned parties.													
8. Schedule Plan Implementation	"	8.	Prepare displays of plan elements, costs, recommended sequence for implementation, existing authorities and needed authorities for implementation.													
9. Prepare Final Report	"	9.	Respond to comments and prepare final report.													
		10.	Prepare dummy draft.													
		11.	Cartographic prepare finished report.													
		12.	Distribute final report.													9/80
			Totals													9/80

Table 23. Phase 4. Public Involvement Work Outline
Chowan - Pasquotank River Basins

Man-days Required by Position and Agency													
Major Activities	Responsible Agency(s)	Item No.	Work Items	Ag. Econ	Planner	P. Ldr.	Typist	So. Cons.	:NC :VA	Total Man-days	Duration	Due Date	
													ERS
1. Hold Policy Committee Meetings to Present Plan and Arrange for Implementation and Public Meetings	SCS, ERS FS, NC, VA " "	1.	Develop agenda, displays, aids and equipment needs.	2	2	2	2	5		2	2	17	2
		2.	Schedule meetings and arrange meeting places.	1	1	1	1	5		1	1	11	1
		3.	Provide notices via news articles and release through appropriate media, newspapers, radio, T.V., institutions mailing list by direct mail.	2	2	2	2	10		2	2	22	2
		4.	Hold meetings, present plan and analyse response.	5	5	5	5	10		5	5	40	5
2. Hold Public Meetings to Present Plans and Arrange for Implementation	" " " " "	5.	Develop agenda, displays, aids and equipment needs.	2	2	2	2	5		2	2	17	2
		6.	Schedule meetings and arrange meeting places.	1	1	1	1	5		1	1	11	1
		7.	Provide notices via news articles and release through appropriate media, newspapers, radio, T.V., institutions mailing list by direct mail.	2	2	2	2	10		2	2	22	2
		8.	Hold meetings, present plan and analyse response.	5	5	5	5	10		5	5	40	5
Totals				20	20	20	20	60	20	20	180	9/80	

